优尚

YOUSHANG SEMICONDUCTOR

设计研发新型功率器件

各类小信号开关

中低压及高压大电流等场效应管

0755-83047638
ysbdt@szyoushang.cn
www.szyoushang.cn

企业微信二维码

企业QQ二维码

Features

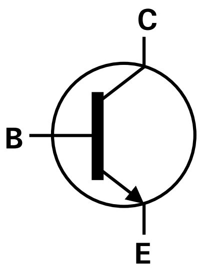
- Low saturation voltage
- 500mW power dissipation
- I_C = 1A high Continuous Current
- Ideally suited for space / weight critical applicatons

Mechanical Data

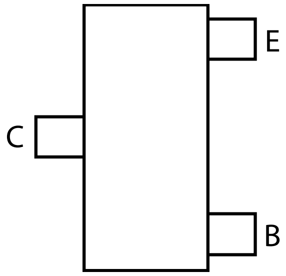
- Case: SOT323
- Case material: molded plastic. “Green” molding compound.
- UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.006 grams (Approximate)

SOT323

Top View



Device Symbol



Top View
Pin Out

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	7	V
Continuous Collector Current	I_C	1	A
Peak Pulse Current	I_{CM}	2	A
Base Current	I_B	200	mA

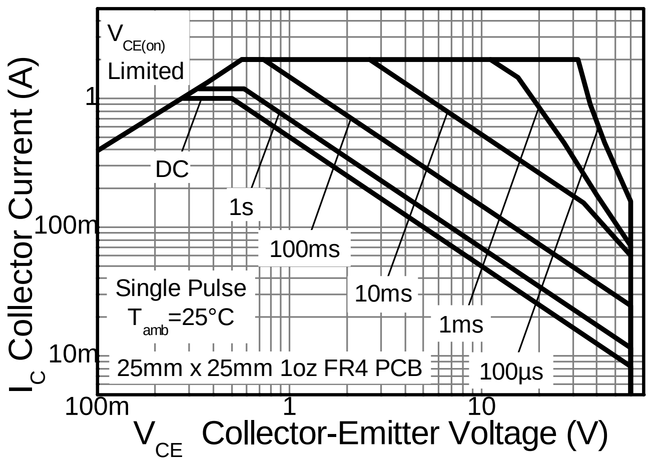
Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	500	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	250	°C/W
Thermal Resistance, Junction to Leads (Note 6)	$R_{\theta JL}$	350	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

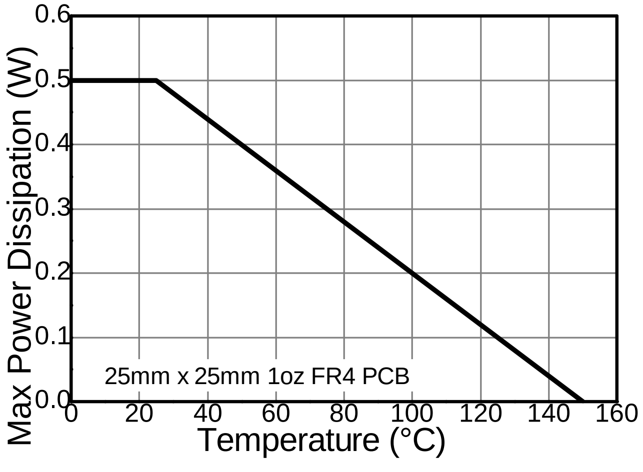
Notes:

5. For a device surface mounted on 25mm X 25mm FR4 PCB with high coverage of single sided 1 oz copper, in still air conditions; device measured when operating in steady state condition.
6. Thermal resistance from junction to solder-point (at the end of the leads).

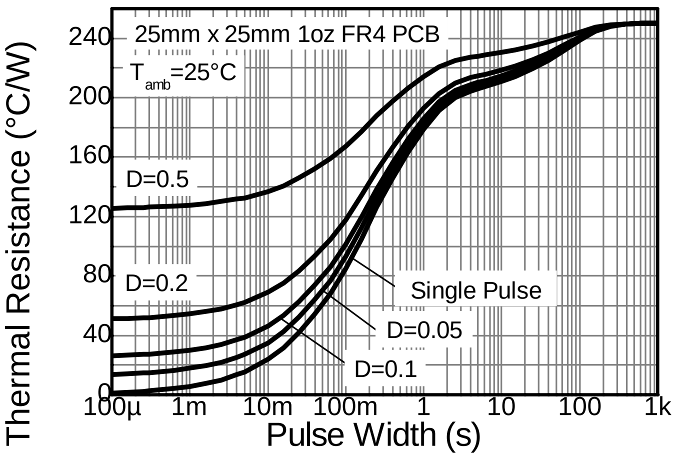
Thermal Characteristics and Derating Information



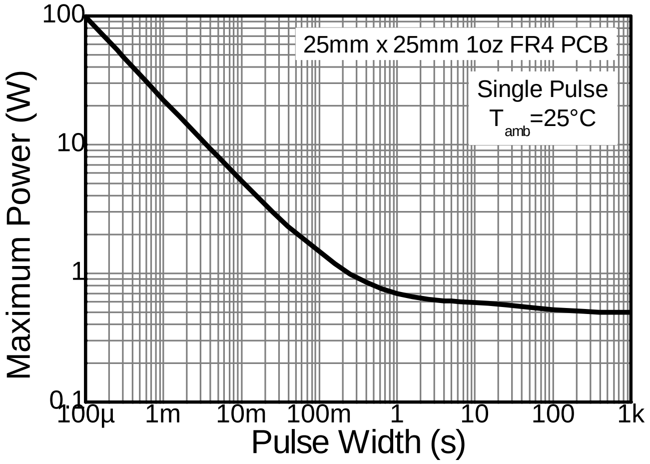
Safe Operating Area



Derating Curve



Transient Thermal Impedance



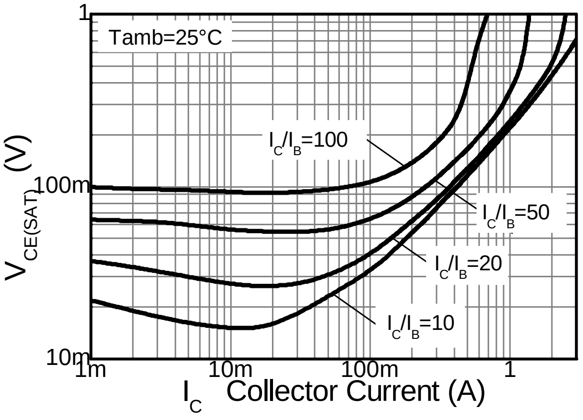
Pulse Power Dissipation

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

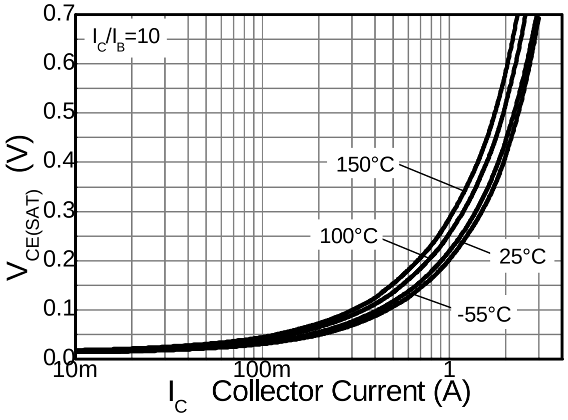
Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS					
Collector-Base Breakdown Voltage	BV_{CBO}	80	—	V	$I_C = 100\mu A$, $I_E = 0$
Collector-Emitter Breakdown Voltage (Note 7)	BV_{CEO}	60	—	V	$I_C = 10mA$, $I_B = 0$
Emitter-Base Breakdown Voltage	BV_{EBO}	7	—	V	$I_E = 100\mu A$, $I_C = 0$
Collector Cutoff Current	I_{CBO}	—	100	nA	$V_{CB} = 60V$
Collector Cutoff Current	I_{CES}	—	100	nA	$V_{CE} = 60V$
Emitter Cutoff Current	I_{EBO}	—	100	nA	$V_{EB} = 5V$
ON CHARACTERISTICS (Note 7)					
DC Current Gain	h_{FE}	100 100 80	— 300 —	—	$I_C = 1mA$, $V_{CE} = 5.0V$ $I_C = 500.0mA$, $V_{CE} = 5.0V$ $I_C = 1.0A$, $V_{CE} = 5.0V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	—	250 500	mV	$I_C = 500mA$, $I_B = 50mA$ $I_C = 1.0A$, $I_B = 100mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	—	1100	mV	$I_C = 1.0A$, $I_B = 100mA$
Base-Emitter Turn On Voltage	$V_{BE(on)}$	—	1000	mV	$I_C = 1.0A$, $V_{CE} = 5.0V$

Notes: 7. Measured under pulsed conditions. Pulse width ≤ 300µs. Duty cycle ≤ 2%.

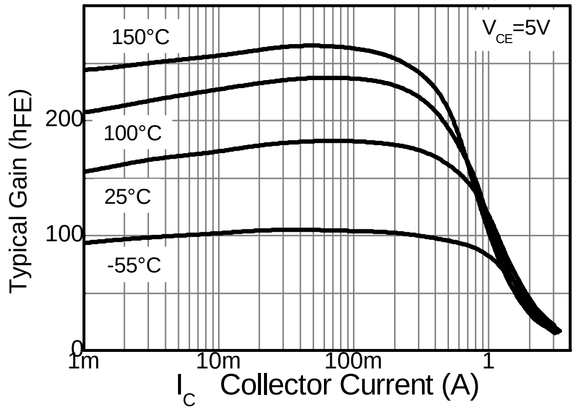
Typical Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)



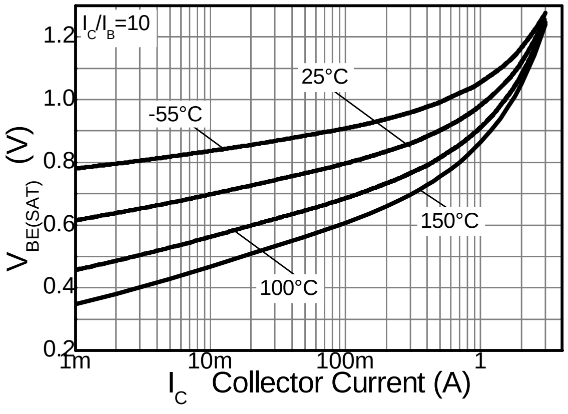
$V_{CE(SAT)}$ v I_C



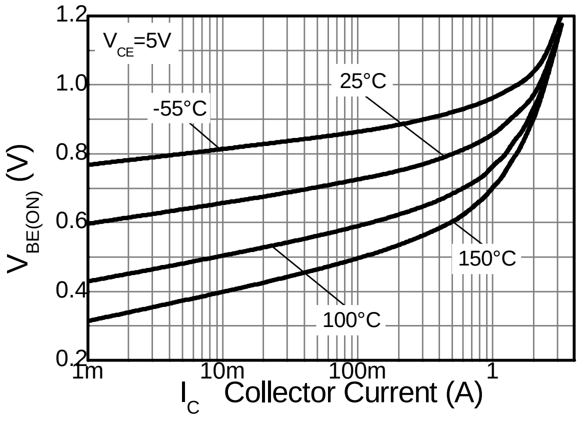
$V_{CE(SAT)}$ v I_C



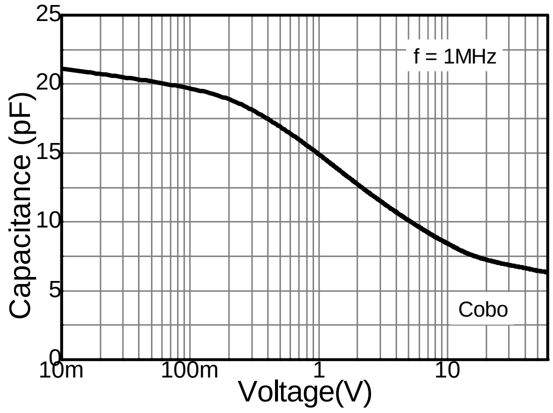
h_{FE} v I_C



$V_{BE(SAT)}$ v I_C

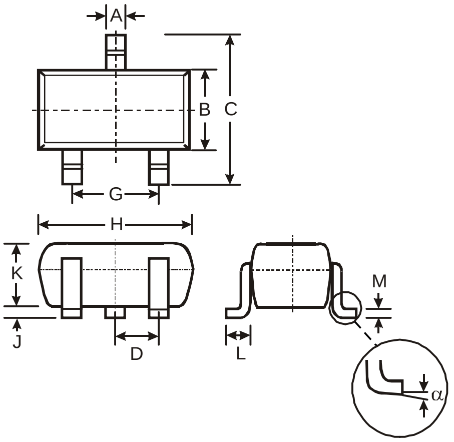


$V_{BE(ON)}$ v I_C



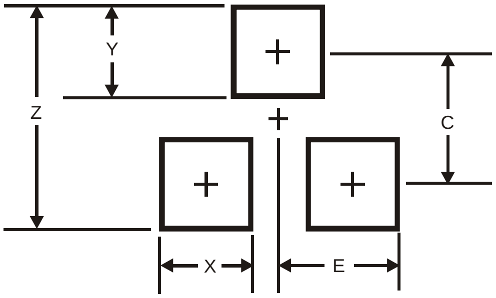
Capacitance v Voltage

Package Outline Dimensions



SOT323			
Dim	**Min**	**Max**	**Typ**
A	0.25	0.40	0.30
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	-	-	0.65
G	1.20	1.40	1.30
H	1.80	2.20	2.15
J	0.0	0.10	0.05
K	0.90	1.00	1.00
L	0.25	0.40	0.30
M	0.10	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.8
X	0.7
Y	0.9
C	1.9
E	1.0